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TREATMENT OF CATARACT,

With special reference to  
Extraction in the Capsule based on the  
results of two thousand cases.

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THESIS

by

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M.D. 1912.



I shall begin by giving a short history of the operation of extraction in the capsule.

The term "extraction" is an erroneous one because we really mean "expression", however in this paper I shall adhere to the term extraction in the capsule.

Attempts were made by the Pagenstechers in the decades 1860, 1870 and 1880 to extract the lens in this manner; their operation implied the introduction of a spoon (the concavity of which was large enough to hold the lens) into the vitreous behind the lens and the lifting of it out in this spoon (vide annals d'oculistique LXVI page 126, 1871.). This procedure was very soon dispensed with on account of the almost universal escape of vitreous.

The first man to extract the lens in its capsule by expression was Mulroney of Amritsar, Punjab. The operation was described by his assistant Dr. Mehr Chand at the Calcutta Medical Congress 1894, and consisted of a lower section without iridectomy. With the speculum still in position, pressure was applied by means of a small scoop or strabismus hook to the upper part of the cornea until the lens made its appearance in the wound, then counter pressure was made below the wound by means of a scoop. When two thirds of the lens was outside the wound, the patient was told to look towards his feet when in most cases the/  
the/

the lens slipped out. In cases where delivery of the lens was retarded, it was completed by the aid of an iris forceps. The above is substantially a quotation.

In 1899 Col. H. Smith I.M.S. Jullundur observed in a number of instances in nervous patients, who shot out the lens in its capsule and some vitreous, on completion of the incision, that the results were all that could be desired and no complication whatever resulted. The above accidental cases led him to imitate the accident and since that date he has practised the operation of extraction in the capsule in all cases except in children and juveniles who are not suitable. Colonel Smith had never seen either Mulroney or the Pagenstechers perform their extraction in the capsule.

The technique of the operation which I have performed in these 2,000 cases is that of Colonel Smith.

In 1908 I was sent to Jullundur by the Government of India and whilst there during the end of the year 1908 and 1909 I performed over 500 extractions under the guidance of Colonel H. Smith I.M.S., and since then I have had the opportunity of performing another 350 extractions at various times under his guidance.

From Jullundur I was transferred to Multan where I started operating on my own account and very soon developed a very large cataract practice. During the year 1910 I performed 721 cases of extraction in the capsule/



capsule. At the end of 1910 I was appointed Specialist in Ophthalmology to the 2nd R. Pindi Division, and during 1911 and up to the 1st of March 1912 I performed 426 extractions in Rawal Pindi. I may mention that the Rawal Pindi district is comparatively free from cataract when compared to the Multan district which is situated in the Sind desert.

#### CASES SUITABLE FOR THE OPERATION.

The great advantage of this operation over all others is the fact that all varieties of cataract can be extracted by this method, whether they are immature, mature, or hypermature, of course excluding all cases in which there is increased tension, dacryocystitis, etc., viz., the reasons for not extracting a lens by any method.

On account of the large number of cases of cataract and other Surgical cases it is impossible for us to examine every case ophthalmoscopically, but an experienced eye can tell at a glance not only whether the cataract is operable or not, but also its variety.

In India where Glaucoma is so common we have always got to be on the outlook for it. If glaucoma is present we either do an iridectomy or sclerotomy and three months later extract the lens if the tension is normal.

(I would like here to lay stress on the fact that the/

the pain in glaucoma is almost always in the temple of the same side and not in the supra-orbital region as described in most text books. How often we see patients coming to hospital with a blister on the temple to relieve the pain and how seldom we see that blister on the supra-orbital region.).

Dacryocystitis should also be carefully looked for and if present should first be cured or the sac extirpated before doing the cataract.

Trachoma if slight should not prevent us operating, but if severe should first be cured. Almost all the poorer classes in India suffer from trachoma of some degree or have suffered from it, and as a consequence the conjunctival sac in these cases is almost completely obliterated.

The nose should always be carefully inspected for any septic condition and if present treated before operating.

If it can possibly be avoided a patient should not be operated on for cataract suffering from severe cough, until it has been cured.

With a little experience the variety and stage of development of the cataract can be diagnosed before operating.

(1) IMMATURE CATARACT: This is very simple and apparent/



apparent to anybody. If a patient comes to us with a very immature cataract, we always suspect some complication. The commonest of these is fundus trouble of some kind or other usually Retinitis pigmentosa which is very common in India. However, by testing the pupillary reflex to light we can always tell if there is any complication.

(2) INTUMESCENT VARIETY: This is the large soft lens with a small nucleus which has been called by Colonel Smith the "Tumbler" on account of the manner in which it behaves on extraction which I shall describe later. This variety is very easily diagnosed by

- (A). The anterior chamber is very shallow.
- (B). The lens is of a greyish floccular wavy appearance.
- (C). The short history of his sight having been affected.

It is very important to detect this variety before operating as the method of extracting it is quite different from the other varieties.

(3). THE HYPERMATURE VARIETY: This is the most difficult variety to extract by this method on account of the toughness of its zonular ligament and the small size of the lens, which indeed in some cases seems to have almost completely shrivelled up and it consists of merely the nucleus and capsule.

It is diagnosed by,

- (A). The very deep anterior chamber.
- (B). The appearance of the lens is like soft white soap.

(C). The long history of his sight having been affected.

It is in this variety that we have most escapes of vitreous. The reason for this, and the methods of its extraction, I will describe later.

Before operating on the wealthy Native of India who almost invariably is gouty, it is advisable to administer Blue pill grs. 5. the night before and a saline the next morning.

If the patient is very nervous Potassium Bromide Grs. 30 should be given  $\frac{1}{2}$  an hour before operating.

A large airy room which can be darkened should be selected for the patient to remain in after operation.

OPERATION: The operation must be performed in a good light, preferably in a room with a glass roof, or at least the front part of it, because it is essential to see right up into the upper fornix. A few drops of a 5% sol. of cocaine are instilled into the conjunctival sac. The skin of the eyelids and eyebrows is carefully washed with soap and water and then spirit. The speculum is now inserted and the conjunctival sac irrigated. The cleansing of the conjunctival sac is I think one of the most important steps in the technique. It is not sufficient to simply pour a few drops of antiseptic or aseptic solution into the eye. The/



The whole conjunctival sac must be thoroughly irrigated. To do this we must lift both lids on the speculum standing behind the patient's head - if operating on the right eye the speculum is lifted in the right hand, and if on the left eye, in the left hand, and the other in each case draws the brow well upwards - this latter manoeuvre will completely expose the upper fornix. It is the upper part of the fornix which is important, as when the eye is bandaged up the wound comes in contact with it owing to the eye being rolled upwards when the eye is closed. I am strongly of opinion that the cause of most suppurations following cataract operations is due to the conjunctival sac not being properly cleansed. With the lids held well forwards and the brow pulled well upwards, the assistant flushes out the sac with 1 - 2000 perchloride of mercury from a reservoir placed 6 ft. above the patient's head. It is necessary in India to use strong antiseptics such as the above on account of the difficulty of being sure of the sterility of aseptic or weak antiseptic lotions. The surgeon who practises aseptic surgery in India will come to grief sooner or later.

THE NEXT STEP IS THE INCISION: With the speculum still in position the eye is fixed by means of an ordinary fixation forceps (without a catch) and the eye drawn downwards. If the right eye is being operated on, the operator should stand behind the patient's head and/  
and/



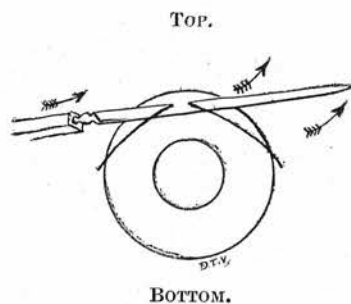


Fig. . . . Showing how in some cases the incision can be made by a single forward thrust of the knife (no draw-cut and no sawing cut). The arrows show the direction to make pressure in completing this cut. The edge of the knife is turned forward toward the cornea.

and cut towards himself. In the case of the left eye he should stand on the left side of the patient and cut away from himself. In both cases the right hand is used for making the incision.

THE HOLDING OF THE KNIFE IS VERY IMPORTANT: It must be held loosely and also we must take a long hold of it, between the thumb and the tip of the index finger, and side of the tip of the middle finger.

Then rest the tip of the little finger on the patient's temple near the zygoma in order to steady the hand. For the beginner it is wise to make an incision of nearly half the cornea. Enter the point of the knife just at the sclero corneal margin with the cutting edge of the blade held at an angle of 30 deg. to the plane of the iris and push it right across the anterior chamber bringing the point out at the opposite sclero corneal margin. When the blade of the knife covers the upper half of a pupil 2.5 mm. then the incision is about the correct size. When the point of the knife has emerged at the opposite side, cutting should be immediately commenced, and when the knife is right through to the heel, the incision should be finished. The knife should not be pushed backwards and forwards in a see saw manner as the resulting wound will be jagged and takes a longer time to heal.

The incision should be completed in the cornea.

The knife during the making of the incision should/





Top.



BOTTOM.

Fig. . Showing how the iridectomy is done after iris is grasped. Note that the ring finger of the left hand is in perfect control of the eyebrow, also that the right hand has perfect command of the scissors causing them to cut clean and sure. The tip of the thumb and the tip of the ring finger of the right hand are inserted in the rings of the scissors.

should be gradually rolled on the fingers so that when the incision is finished it will come out at right angles to the iris just short of the corneal margin. The cornea should not be obliquely cut as there is a large degree of resultant astigmatism.

I am not going to give the reasons why the above is the ideal cataract incision as they are fully described in a paper read by Captain McKechnie I.M.S. before the Bombay Medical Congress in February 1909.

The advantages of this incision are:-

- (A). That there is no bleeding.
- (B). There is no overlapping of the wound.
- (C). Approximation of the wound surfaces is complete.

If the knife is brought out in an oblique direction in the sclerotic, making a conjunctival flap, there is a lot of haemorrhage and the resulting scar is very liable to be a filtering one. Whilst in Vienna lately where this incision is practised the operator at times spent five minutes drying up the blood. In one case it was so severe as to look like an expulsive haemorrhage. I saw at least two eyes with filtering scars after the operation. The above complications are never seen after a radial corneal incision.

THE NEXT STEP IS THE IRIDECTOMY: personally I always do an iridectomy unless the patient specially requests me/



TOP.



BOTTOM.

Fig. . . Showing the proper position for the assistant to assume in controlling the articularis and the brow by means of the lid-hook in his right hand, and the lower lid and patients head by means of his left hand after the iridectomy and before the operation uses his lens hook for expressing the cataract in its capsule. If all goes well this position is maintained without shifting until the operation is completed.

me not to do it. If an iridectomy is not performed there is a larger percentage of iris prolapse.

With the speculum still in position take a pair of ordinary curved iris forceps preferably with plane surfaces or very slightly serrated and hold them vertically to the iris between the thumb and the first finger and steady the blades with the middle finger. With the third finger of the same hand pull the brow well upwards (the assistant of course holds the eye down-wards with the fixation forceps.) Then drop one limb of the iris forceps (the limb nearest the operator) into the wound, the other limb is placed on the cornea over the pupil and with a little pressure by means of this limb the iris is brought upwards to the other limb and grasped outside the wound. It is almost necessary to see this done in order to be able to do it. Then with an ordinary scissors curved on the flat remove a small piece of iris including the sphincter.

The great advantage of doing an iridectomy by this method is that there is no instrument introduced into the anterior chamber which could either cause an infection or scratch the lens capsule - an accident which is exceedingly common when one tries to pick up the iris off the lens.

For the beginner the iridectomy is the most difficult/



difficult part of the operation. An absolute steadiness of hand is required and this is not acquired until the operator has perfect confidence in his own ability to do the operation.

After the iridectomy is completed the speculum is removed and with the ball of the thumb over the lids all the aqueous and tears are removed from the conjunctival sac by pressing from the nasal to the temporal side.

The assistant has now got to control the lids, but before going further I shall describe how this should be done. Provided that the operator is competent the escape of vitreous depends on the ability of the assistant to control the lids. To illustrate this point I was demonstrating this operation in Prof. Fuchs' clinic in Vienna. I was without my own assistant. Dr. J. Neller consented to assist me, stating that he had assisted Prof. Fuchs at many thousands of cases by the old method. I told him that his practice as Fuchs' assistant would be useless or almost so in this operation, and it proved itself to be such which he admitted after the operation. After the lens had been removed a small hernia of the vitreous appeared in the wound which he allowed to rupture owing to not having proper control of the lids.

The method of controlling the lids is as follows.

The/

TOP.



BOTTOM.

Fig. . . Showing the proper position of the assistant's hands in holding the eye-lids, while the operator is expressing the lens in its capsule through an upward incision (notice how the eyebrow is being held up by the assistant's three fingers). The upper lid is hung on the lid hook exposing the summit of the eyeball. The lower lid is evicted by the thumb of the assistant's left hand.

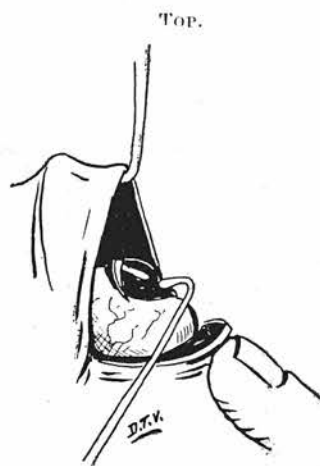
The assistant should stand on the left side of the patient in the case of either eye. With the thumb of the left hand he pulls the lower lid well down and away from the globe, then with a large strabismus hook in the right hand between the thumb and first finger he should lift the upper lid well forward and with the remaining fingers of the same hand the brow muscles are pushed well up over the supra-orbital ridge. The lid must on no account be pulled upwards as this does not remove the pressure from the globe.

The operator can always tell if the assistant is performing his duty properly by the fact that the cornea, when all pressure is removed from the globe, falls back on to the surface of the iris and lens. If it does not do this the patient is getting pressure on to the globe and we are likely to have an escape of vitreous.

The training of the assistant is a very simple matter, and to learn the method he should practise on a number of cocainised eyes daily on which no operation is being done.

My present assistant is a third class Sub Assist-Surgeon whom I trained in Multan. He has now been with me for over  $2\frac{1}{2}$  years and is now a thoroughly competent man. At the first 100 cataracts at which he assisted me, I had 11 escapes of vitreous, and 9 of those occurred in the first 50. This indicates the importance of/





BOTTOM.

Fig. . Showing the side view of the eye in the act of beginning the pressure to deliver the lens. The wound is just beginning to open to let the advancing lens pass through, while steady deep pressure is being made to complete its delivery. The upper lid is held on the lid hook by the assistant and the lower lid everted with his thumbs.

of a well trained assistant in this operation.

In prominent eyes the assistant will have much more trouble in controlling the lids, and escape of vitreous is more liable to occur.

The operator should now take the strabismus hook in his right and a double spoon in his left hand and standing at the head of the patient somewhat to the right side in order to be able to see right up into the upper fornix. The spoon should be held near the eye but not near the nostrils or mouth.

The point of the strabismus hook is now placed over the lower third of the lens. The direction of the pressure will differ according to the variety of the lens.

IN THE CASE OF IMMATURE AND ALL HARD LENSES, the direction of the pressure is straight back to the optic nerve.

When the upper pole of the lens begins to tilt up into the wound it should be followed upwards with the point of the hook, at the same time keeping up sufficient pressure to keep the lens moving. After  $\frac{3}{4}$  of the lens is delivered the remaining part of the zonular ligament gives way very suddenly, therefore we must be very careful to remove pressure instantaneously when the lens pops out. If we continue pressure, escape of vitreous is inevitable. The lens should be removed from the conjunctival sac by means of the spoon.

In/



Fig. . Showing where deep pressure is made with the bulbous end of the lens hook pressing back toward the optic nerve, while the lens moves out in the upright position. The cornea should be tucked behind the lens thus completing its birth.



IN THE CASE OF THE INTUMESCENT LENS, the pressure is directed towards the patient's feet. In fact we pull the lower third of the cornea with the point of the hook towards the patient's feet. The effect of this is that we dislocate the lower pole of the lens first, and then the lens turns a complete somersault in the eye. When it has tumbled over, pressure must now be directed backwards and upwards, at the same time folding the cornea beneath the lens, as it is being delivered. The object of dislocating the lower pole of the lens first is that, if it should burst, before it is completely delivered the capsule does not retract, owing to its only being attached above, and from this position it can easily be removed by means of a pair of dissecting forceps. This variety of cataract has been called by Smith the "tumbler" for the above reason.

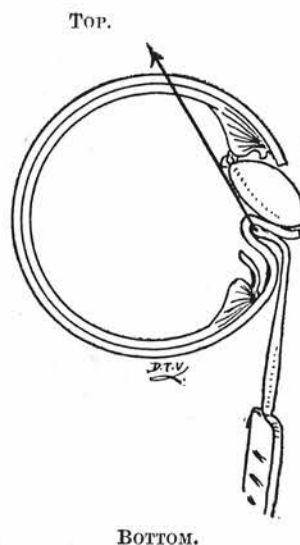
IN THE CASE OF THE HYPERMATURE CATARACT, I think it is best to first try and dislocate it by means of pressure applied straight back to the optic nerve, but if it shows no signs of dislocating, pressure should be discontinued and the spoon inserted behind the lens. Now apply pressure in the usual position straight backwards against the spoon. The lens will slide up the inclined plane of the spoon. The spoon must be held steady in its position behind the lens and not used to lift out the lens.

This/

This is by far the most difficult lens to extract on account of its small size and the toughness of its zonular ligament. In either the immature, mature, or intumescent varieties, should vitreous appear before the lens is delivered the spoon should be immediately inserted and pressure applied against the spoon and not against the vitreous.

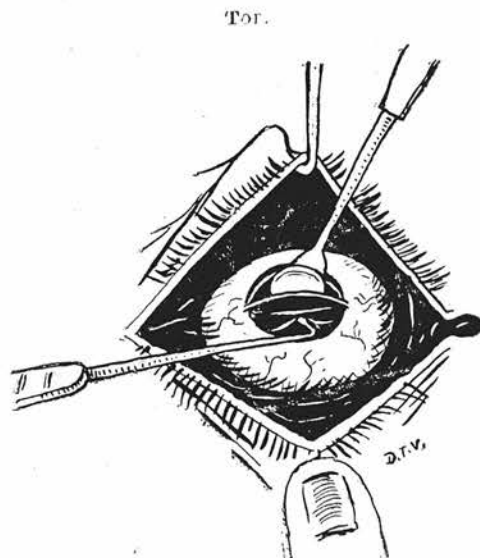
The next step of the operation is to replace the iris. This is done by means of a Knapps iris reposit-  
or. The iris should be carefully separated from the angles of the wound, and also from the upper edge of the wound until it falls back on to the hyaloid membrane. The assistant now slowly leaves go the lids. This completes the operation.

A little yellow oxide of mercury 8 grs. to the ounce is applied over both palpebral fissures and a strip of gauze soaked in 1 in 2000 perchloride of mercury solution applied over both eyes. A little cotton wool and a binocular bandage is now applied. The patient should now be carefully carried back to bed on a stretcher and placed on his back. He is told to remain in this position for 24 hours and for three full days to remain in bed. He is allowed to sit up on the fourth day. If no pain is complained of, the bandage and dressings are not removed until the tenth day. Constantly changing dressings and examining the eye will almost certainly lead to incarceration of the/  
the/



BOTTOM.

Fig. . The lens is coming out lower rim first ("tumbler") The spear shows the proper direction in which to press in order to tuck the cornea behind the lens. The lens is still attached by its upper suspensory ligaments.



BOTTOM.

Fig. . Showing the tip of the spoon entered into the wound behind the lens in cases where the vitreous presents or there is an ominous gap on pressure. The spoon is held steadily while the lens as a background for the lens to slide out against thus taking the strain off of the vitreous. The hook is following the lens up and making all the pressure. The assistant's thumb is shown holding the lower lid down. Notice the upper lid is hung on the lid hook.



the iris or to gaping of the wound.

The above is a short account of the operation which I performed in my 2000 cases.

It would be impossible for me to go into each case and give the amount of sight which each case had on leaving hospital, but I have picked thirty-one cases which were done by me in the mission hospital Multan, and have given full notes.

These cases are not selected cases in any way.

My 2,000 cases included the following:-

Immature cases ..... 496.

Intumescent ..... 573.

Mature ..... 797.

Hypermaturation ..... 114.

Couched ..... 20.

The following table shows the accidents and complications at the time of operation and afterwards.

Variety	No. of cases.	Vitreous escapes.	Capsule ruptured at operation	Capsule ruptured and removed	Iritis	Suppuration	Prolapse of iris.
Immature	496	21	4	none	none	1	14
Intumescent	573	26	46	27	3	3	23
Mature	797	39	16	9	3	2	29
Hypermaturation	114	15	3	none	7	3	4
Couched	20	6	0	0	2	3	0

The above table shows that the greatest number of/

of escapes of vitreous takes place in hypermature and couched lenses.

A couched lens is one which the Rawal (lens coucher) has previously dislocated into the vitreous, but which has returned to its fossa on the hyaloid membrane. The vitreous in these cases is nearly always of watery consistence such as we often find in chronic glaucoma and this is the cause of escape of vitreous.

The percentage of iritis as seen from the above table is practically nil and also the number of eyes lost from suppuration. It is of interest to note that every case of iritis except one occurred in eyes in which the capsule was left behind.

Under the heading iritis I have included all cases in which plastic exudation from the iris was sufficient to cause adhesions to the capsule or visible with the help of a +14 lens and a good light.

IRIS PROLAPSE. The greatest number of prolapses occurred in intumescent cases. I think that this is due to the fact that the lens is larger than the others and consequently presses the iris up into the wound, and of course faulty reposition by the operator.

SUPPURATION. The greatest percentages of suppurations occurred in the case of the couched and hypermature variety. This is due to the fact that in both these cases the spoon had to be placed behind the lens in order to remove it. In other words eyes that had been meddled/



meddled with most showed the largest percentage of suppurations.

#### THE OPERATION IN GENERAL.

It is a much more difficult operation to perform than any of the older operations . Every detail in the technique is of the utmost importance. So far as the incision is concerned it does not matter much how it is made so long as it is large enough, but the incision above described gives the best results. It is in the expression of the lens that every detail must be attended to. The patient should on no account be asked to help in any way, by looking in any special direction, in fact the personal equation of the patient should be left severely alone. This is a great advantage, as in the case of nervous patients we have got them completely under control and they are unable to squeeze on the globe if the assistant is competent.

The only annoying thing that the patient can do is to look down: this always predisposes to an escape of vitreous. The reason of this is that looking downwards is a strained position, whilst looking upwards is the natural position of the eye at rest.

I am strongly of opinion that this operation should not be attempted from a written description.

I have seen many operators who had not seen it done attempt it and they had not the vaguest idea of the details/



details of the operation. I saw one Continental surgeon attempt it without a speculum, and to express the lens he used the ball of his first finger outside the lower lid.

He told me that he had given up the operation on account of the excessive amount of pressure he had to employ, and the frequency of escape of vitreous. This is not to be wondered at seeing the methods he employed.

A proper set of instruments should be employed: these can be obtained from Arnold and Sons, London, who have kindly copied my set of instruments.

The most important in the set is the speculum. It should have a weak spring so that the patient is unable to get much pressure on it and also that it shall not exert much pressure on the lids. It is also important that the point of the small strabismus hook which is used to express the lens should have a smooth point otherwise it will injure the cornea.

#### ADVANTAGES OF THE OPERATION.

A lot has been written on the advantages and disadvantages of the operation, chiefly the latter. The reason why most people who have tried the operation, without having seen it done, have failed to get good results, is simply because they did not know how to do the operation. They tried it from written descriptions/

descriptions. I am able to speak with certainty on this point because I have had the good fortune to be able to see most Continental ophthalmic surgeons at work, and also a large number of American and Canadian ophthalmologists. Many of these men had been practising this operation with very indifferent results and each of them admitted in turn that he was not doing the same operation.

The excellent vision obtained is, I think, the greatest advantage of this operation. It is quite impossible to get the same vision by any of the older operations. In the first place there is no capsule left behind to interfere with the sight or to act as a foreign body, for such it is, because it has lost its vitality and simply acts as an irritant.

A lens in any stage of development can be extracted by this method.

Only one operation has got to be done.

Absence of Iritis.

Small percentage of suppurations.

The after-treatment is practically nil. This fact is of great importance in India where the surgeon has such a small staff of assistants to help him.

The chief disadvantages are:-

The difficulty of the operation for anybody who has not seen it done, or performed it under a competent/

competent teacher.

The necessity of a trained assistant.

The other objections which have been raised are:-

The number of vitreous escapes. I can now say that this number ought not to exceed 7% in trained hands and this is not much in excess, if any, on the percentage in the capsule laceration operation. I saw 14 cataracts done in one Continental hospital with three escapes of vitreous.

It is a strange fact that surgeons who have tried this operation and who have condemned it, refrain from giving any details of the results of the operation which they themselves are in the habit of performing. It is a great pity that surgeons are not a little more open-minded in questions of this kind.

The Continental surgeon won't perform any operation which has not emanated from his own school, and it is exactly the same in England. The patient should be considered in the first place. Jealousy and conservancy should have second places, or none at all.

Theoretical reasons have been brought forward against it but have proved themselves groundless in the face of practical experience.

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I give below the visual results of 31 cases done in the Mission Hospital, Multan. I choose this lot as I have the notes to hand at present. 30 cases were done in the capsule and one case by the Capsule laceration method. These cases were done by me during part of September and October 1910.

Name	Date of operation	Complications during operation.	Complications after operation.	Vision on discharge	Variety of Cataract.
Khatun	Sept 9/10	none	none	R E 6/4.5 L E 6/4.5	Double Mature
Bhari	" 9/10	"	"	R E 6/6 L E 6/6	Double Immature
Ganga	" 9/10	"	"	R E 6/4.5 L E 6/6	Double Mature
Zinde	" 12/10	"	"	R E 6/6 L E 6/6	R Mature L Immature
Ashan	" 12/10	"	"	L E 6/4.5	Immature
Tala	" 15/10	"	"	R E 6/6	Mature
Saddan	" 20/10	L Capsule burst Extracted.	L Slight Iris prolapse	R E 6/6 L E 6/9	Immature Intumescent.
Janki	" 20/10	none	none	R E 6/9 L E 6/9	Capsule laceration operation.
Khatun	" 26/10	"	"	R E 6/4.5 L E 6/6	Mature
Battu	" 26/10	"	"	R E 6/6	Immature
Dalle	Oct. 1/10	"	"	R E 6/6	Immature
Malle	" 1/10	"	"	R E 6/6 L E 6/4.5	Mature Immature
Wanwali	" 5/10	"	"	R E 6/6 L E 6/4.5	Mature
Chandi	" 5/10	R Capsule burst Extrd.	"	R E 6/6 L E 6/4.5	Intumescent
Kane	" 5/10	none	Slight Prolapse of iris.	L E 6/9	Immature

Name	Date of operation	Complications during operation.	Complications after operation.	Vision on discharge	Variety of Cataract.
Lalbibbi	Oct. 7/10	none	none	R E 6/4.5 L E 6/4.5	Immature
Raham	" 10/10	"	"	R E 6/4.5 L E 6/4.5	Black Mature
Hesain	" 13/10	"	"	L E 6/9	Mature
Mirbibbi	" 15/10	"	"	L E 6/6	Intumescent.





In the February Number of the Indian Medical Gazette, I published a paper on the subject of Subconjunctival injections of Cyanide of Mercury in Trachomatous conditions etc.

In December last Colonel Smith I.M.S., asked me to try Subconjunctival Injections of Cyanide of Mercury for Immature Cataract. We had previously noticed how small corneal opacities were removed by cyanide, and this led Colonel Smith to try it in beginning opacity of the lens.

I have tried the above treatment in four cases, and in two of the cases the sight improved from 6/9 to 6/6. This was a huge surprise to me as I felt very doubtful on the subject before trying it. In the other two cases no improvement took place because the opacity was too dense. Colonel Smith has tried it in eight cases and in five of these he got excellent results. One of these cases I saw. He was a Risaldar in a native Cavalry Regiment - a very smart intelligent man. His vision improved in  $4\frac{1}{2}$  weeks from 6/18 to 6/9 and Colonel Smith informs me that it is almost 6/6 now, i.e. three months after the treatment was begun.

This effect does not, as would be expected take place at once. It is a very slow procedure, hence the small number of cases we have been able to try it on.

On my return to India I am going to continue its use in all Immature cases, and shall publish my results at/



at the end of next March, i.e. the end of the first Cataract season in India.

If this treatment succeeds in all beginning cataracts, it puts an end practically to the whole controversy on Cataract operation. It will be a revolution in cataract work.

I have only given a short note on this treatment as I am not in a position to do otherwise.

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